405 KAR 3:100. Backfilling and grading.

RELATES TO: KRS 350.151
STATUTORY AUTHORITY: KRS 350.151
NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.151 requires the Environmental and Public Protection Cabinet Natural Resources and Environmental Protection Cabinet to adopt rules and administrative regulations for the surface effects of underground coal mining. This administrative regulation sets forth requirements relating to the backfilling and grading of areas affected by underground mining operations.

Section 1. Upon completion of underground mining, surface work areas which are involved in excavation, disposal of materials, or otherwise affected, shall be regraded to approximate original contour. The permittee shall transport, backfill and compact fill material to assure stability or to prevent leaching of toxic pollutants. Barren rock or similar materials excess to the mining operations and which are disposed on the land surface shall be subject to the provisions of 405 KAR 3:110 of this chapter.

Section 2. Roads and support facility areas existing prior to May 3, 1978, the effective date of this administrative regulation, and used in support of underground mining operations shall be regraded to the extent deemed feasible by the cabinet based on the availability of backfill material and resulting stability of the affected lands after reclamation. As a minimum, the permittee shall be required to:

(1) Retain all earth, rock and other mineral nonwaste materials on the solid portion of existing or new benches, except that the cabinet may permit placement of such material at the site of the face-up as a means of disposing of excavated spoil when additional working space is needed to facilitate operations. Such placement of material shall be limited to minimize disturbance of land and to the hydrologic balance. Such fills shall be stabilized with vegetation and shall achieve a minimum static safety factor of one and five-tenths (1.5). In no case shall the outslope exceed the angle of repose.

(2) Backfill, compact, and grade spoil material to the most moderate slope possible to eliminate any highwall along roads, mine entry faces or other areas like spoil piles, and depressions. Slopes shall not exceed the angle of repose or such lesser slopes as required by the cabinet to maintain stability.

Section 3. Slope Measurements. (1) To determine the natural slopes of the area before mining, sufficient slopes to adequately represent the land surface configuration, and as approved by the cabinet, in accordance with site conditions, must be accurately measured and recorded. Each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the area to be disturbed; or, where this is impractical, at locations specified by the cabinet. Where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances as determined by the cabinet to be representative of the premining configuration of the land. Slope measurements shall take into account natural variations in slope so as to provide accurate representation of the range of natural slopes and shall reflect geomorphic differences of the area to be disturbed. Slope measurements may be made from topographic maps showing contour lines having sufficient detail and accuracy consistent with the submitted mining and reclamation plan.

(2) After the disturbed area has been graded, the final graded slopes shall be measured at the beginning and end of lines established on the prevailing slope at locations representative of predisturbed slope conditions and approved by the cabinet. These measurements must not be made so as to allow unacceptably steep slopes to be constructed.

Section 4. Final Graded Slopes. (1) The final graded slopes shall not exceed either the approximate premining slopes as determined according to Section 3(1) of this administrative regulation or any lesser slope specified by the cabinet based on consideration of soil, climate, or other characteristics of the surrounding area. Postmining final graded slopes need not be uniform.

(2) On approval by the cabinet and in order to conserve soil moisture, ensure stability, and control erosion on final graded slopes, cut-and-fill terraces may be allowed if the terraces are appropriate substitutes for construction of lower grades on the reclaimed lands. The terraces shall meet the following requirements:

(a) The width of the individual terrace bench shall not exceed twenty (20) feet unless specifically approved by the cabinet as necessary for stability, erosion control, or roads.

(b) The vertical distance between terraces shall be as specified by the cabinet to prevent excessive erosion and to provide long-term stability.

(c) The slope of the terrace outslope shall not exceed 1v:2h (fifty (50) percent). Outslopes which exceed 1v:2h (fifty (50) percent) may be approved if they have a minimum static safety factor of 1.5 or more and provide adequate control over erosion and closely resemble the surface configuration of the land prior to mining. In no case may highwalls be left as part of terraces.

(d) Culverts and underground rock drains shall be used on terraces only when approved by the cabinet.

Section 5. Regrading or Stabilizing Rills and Gullies. When rills or gullies deeper than nine (9) inches form in areas that have been regraded and the topsoil replaced but vegetation has not yet been established, the permittee shall fill, grade, or otherwise stabilize the rills and gullies and reseed or replant the areas in accordance with 405 KAR 3:080 with regard to revegetation. The cabinet shall specify that rills or gullies of lesser size be stabilized if they result in additional erosion and sedimentation.

Section 6. Covering and Stabilization. (1) Any acid-forming, toxic-forming, combustible materials, or any other waste materials as identified by the cabinet that are exposed, used, or produced during underground mining and which are deposited on the land surface shall, after placement in accordance with 405 KAR 3:110 with regard to disposal of excess rock and earth materials, be covered with a minimum of four (4) feet of nontoxic and noncombustible material; or, if necessary, treated to neutralize toxicity, in order to prevent water pollution and sustained combustion, and to minimize adverse effects on plant growth and land uses. Where necessary to protect against upward migration of salts, exposure by erosion, to provide an adequate depth for plant growth, or to otherwise meet local conditions, the cabinet shall specify thicker amount of cover using nontoxic material. Acid-forming or toxic-forming material shall not be buried or stored in proximity to a drainage course so as to pose a threat of water pollution or otherwise violate the provisions of 405 KAR 3:130 with regard to protection of the hydrologic system.

(2) Backfilled materials shall be selectively placed and compacted wherever necessary to prevent leaching of acid-forming and toxic-forming materials into surface or subsurface waters and wherever necessary to ensure the stability of the backfilled materials. The method of compacting backfill material and the design specifications shall be approved by the cabinet before the acid-forming or toxic-forming materials are covered.

Section 7. Steep Slopes. All surface operations on steep slopes of twenty (20) degrees or more or on such lesser slopes as the cabinet may define as a steep slope shall be conducted so as not to place any material on the downslope below road cuts, mine working or other benches, other than in conformance with Section 2(1) of this administrative regulation.

Section 8. Grading along the Contour. All final grading, preparation of earth, rock and other non-waste materials before replacement of topsoil, and placement of topsoil, in accordance with the provisions of 405 KAR 3:080 (topsoil handling), shall be done along the contour unless such grading would be hazardous to equipment operators. In all cases, grading, preparation, or placement shall be conducted in a manner which minimizes erosion and provides a surface for replacement of topsoil which will minimize slippage. (4 Ky.R. 416; eff. 5-3-78; Am. 518; 5 Ky.R. 226; eff. 8-23-78; TAm eff. 8-9-2007.)